

Peripheral Arterial Occlusive Disease- The Challenge in patients with diabetes

Ashok Handa

Reader in Surgery and Consultant Surgeon

Nuffield Department of Surgery

University of Oxford

Introduction

- Vascular disease is a major cause of mortality in the West
- Accounts for >40% of deaths in the UK
- Atherosclerosis is the underlying cause



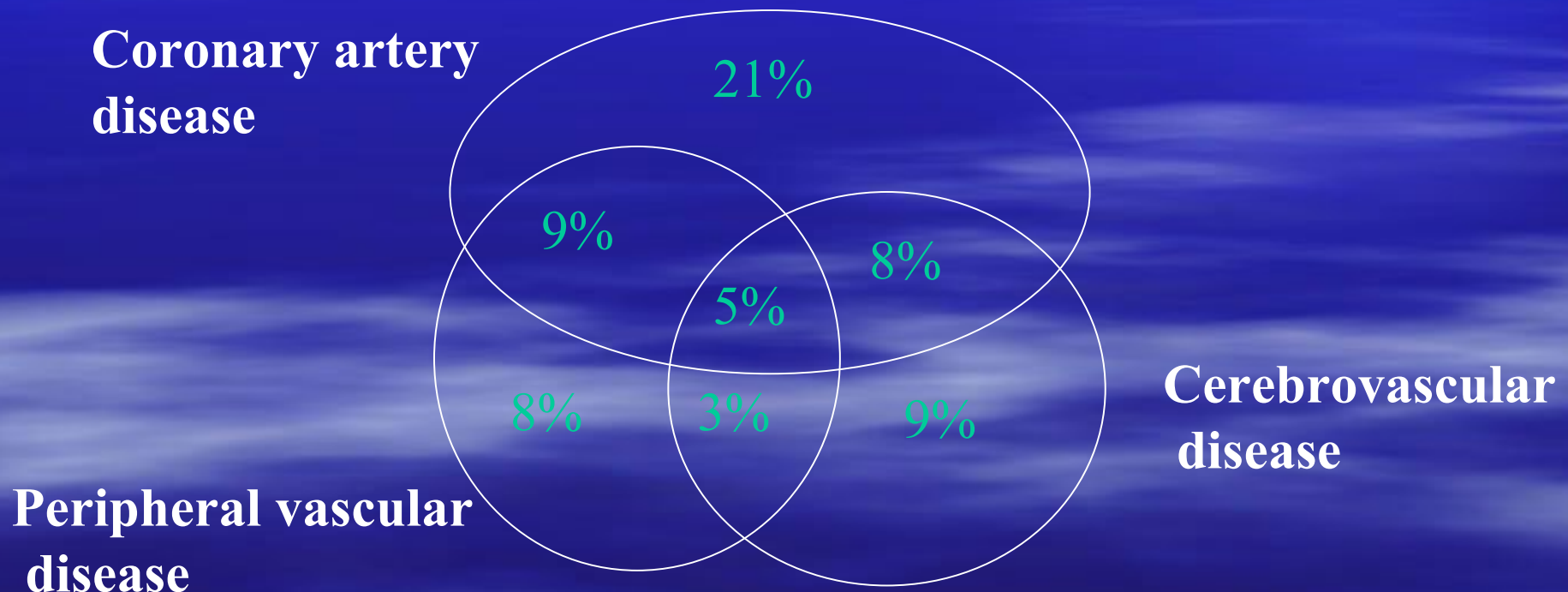


Background

- Common
- 4.5% 55-74 yrs symptomatic claudication
- 20% elderly men

Co-existence of Coronary, Cerebral and Peripheral Vascular Disease

Prevalence of vascular disease in a population 62 years of age and over



Athero-thrombosis affects many vascular beds

Ischaemic stroke

Transient ischaemic attack

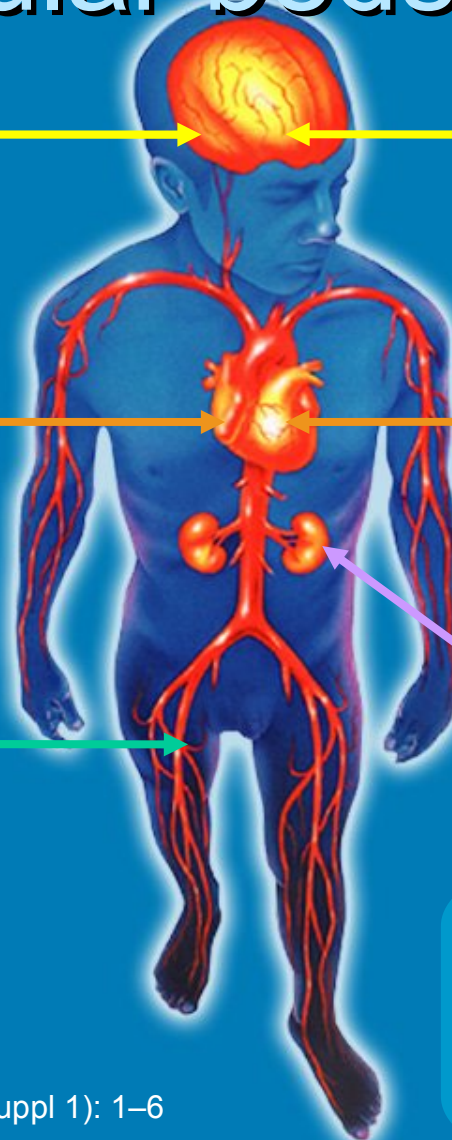
Myocardial infarction

Angina:
Stable
Unstable

Peripheral arterial disease:
Intermittent claudication
Rest pain
Gangrene
Necrosis

Renovascular disease

Diabetes (type 2)
Often considered vascular equivalent to a non-diabetic patient with previous MI²



- Adapted from: Drouet L. *Cerebrovasc Dis* 2002; 13(Suppl 1): 1–6
- Adapted from Haffner SM et al. *N Engl J Med* 1998;339:229-234

Clinical Presentation

- Acutely with threatened limb (6 P's)
- Chronically with IC, rest pain, ulceration or gangrene
- Associated coronary artery disease
- Associated cerebral arterial disease

The six P's

- Pain
- Pallor
- Paralysis
- Parasthesia
- Pulseless
- Perishing cold

Clinical Assessment

- History of presenting complaint
- Risk factors
- Coronary symptoms
- Cerebral symptoms

Risk Factors

- Tobacco Smoking
- Hypertension
- Hypercholesterolaemia
- Diabetes Mellitus
- Family History

Implication for patients

- Degree of Handicap?
- Extent of Disability?
- Quality of Life
- Lifestyle Limitation

Investigation

- Laboratory
- ECG
- ABPI
- Lifestyle limitation

Objective Assessment

- Treadmill
- Corridor Walking Test
- 6 Minute Walking Test
- Quality of Life assessment
- Activity restriction list!!

Further Investigation

- Depends of impact to patient
- Duplex scan
- Angiography
- CT angiography
- MRA
- Cardiac assessment

Outcome

	Dormandy 1991	Leng 1996
Patients	1,966	116
Follow up	1 year	5 years
Reconstruction	5 %	10%
Amputation	1.6%	5%

One event leads to another

Original Event = Stroke

MI Risk

- 2-3 x greater risk^{2*}

Stroke Risk

- 9 x greater risk³

Original Event = MI

MI Risk

- 5-7 x greater risk¹⁺

Stroke Risk

- 3-4 x greater risk²⁺⁺

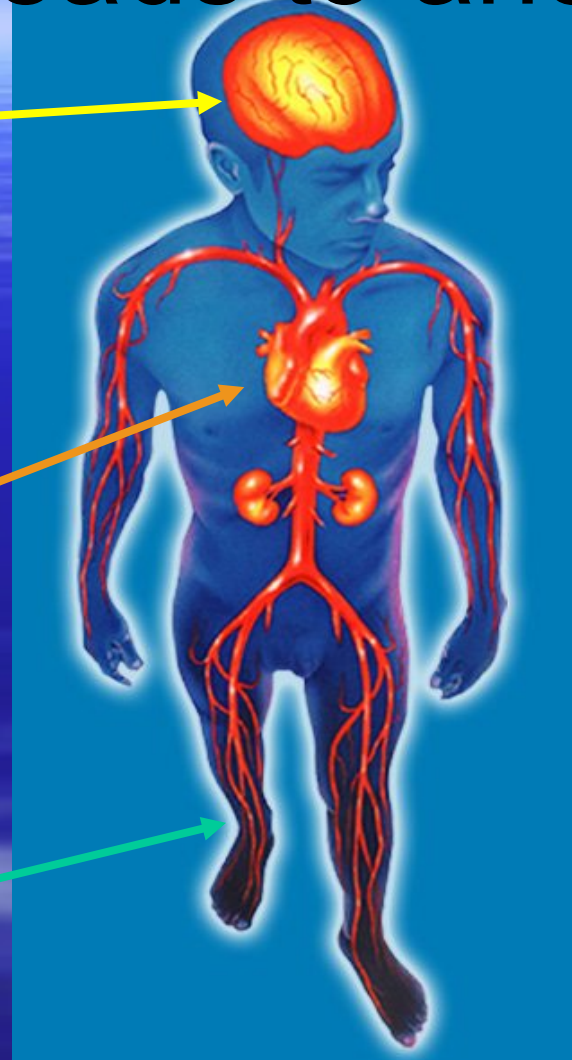
Original Condition = PAD

MI Risk

- 4 x greater risk^{4**}

Stroke Risk

- 2-3 x greater risk³⁺⁺



Diabetes

(type 2)

Because of the increased risk associated with diabetes, it should be considered a cardiovascular risk equivalent to a non-diabetic patient with previous MI

Data is increased risk vs general population (%)

*Includes angina and sudden death. Sudden death defined as death documented within 1 hour and attributed to coronary heart disease (CHD)

**Includes only fatal heart attack and other CHD death; does not include non-fatal heart attack,

+ Includes death

++Includes TIA

1. Adult Treatment Panel II. *Circulation* 1994; 89:1333-63.

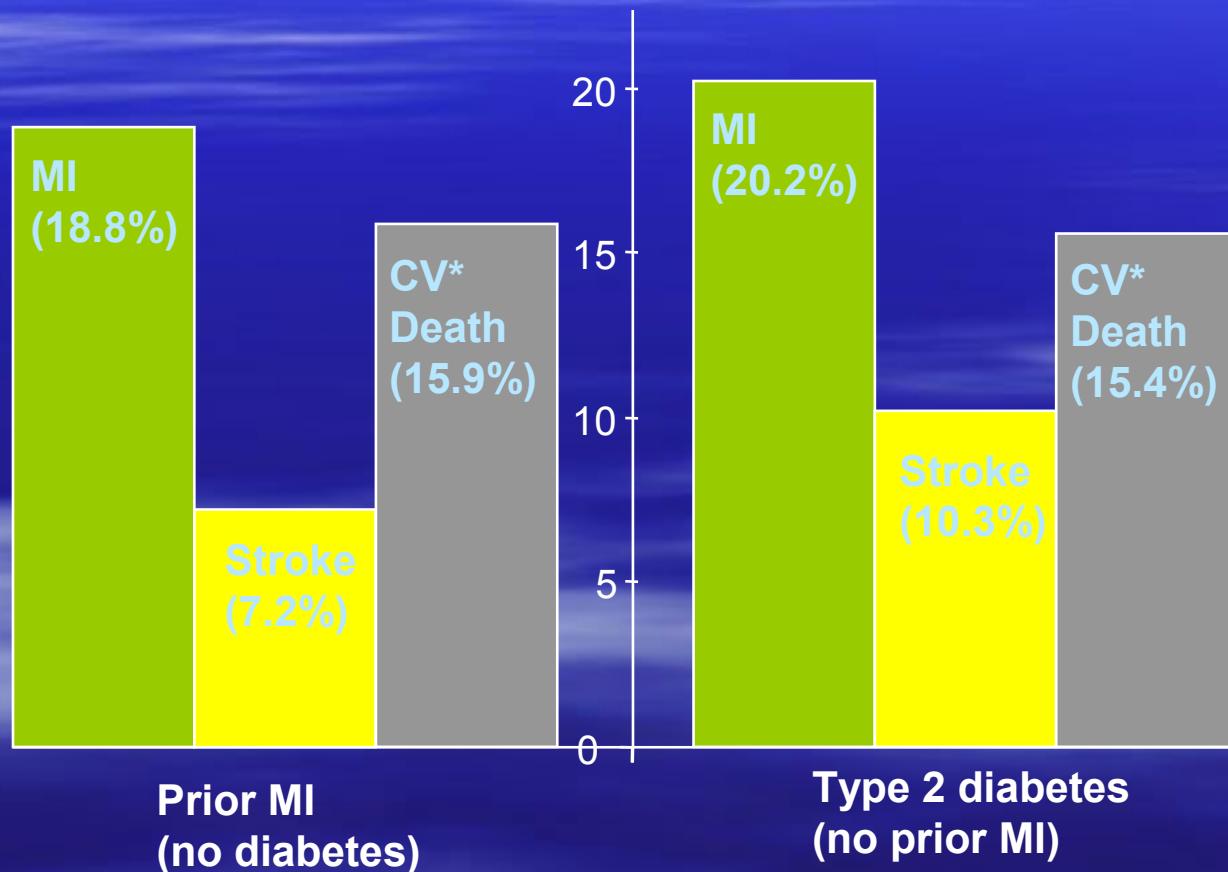
2. Kannel WB. *J Cardiovasc Risk* 1994; 1: 333-9.

3. Wilterdink JI, Easton JD. *Arch Neurol*1992; 49: 857-63.

4. Criqui MH et al. *N Engl J Med* 1992; 326: 381-6.

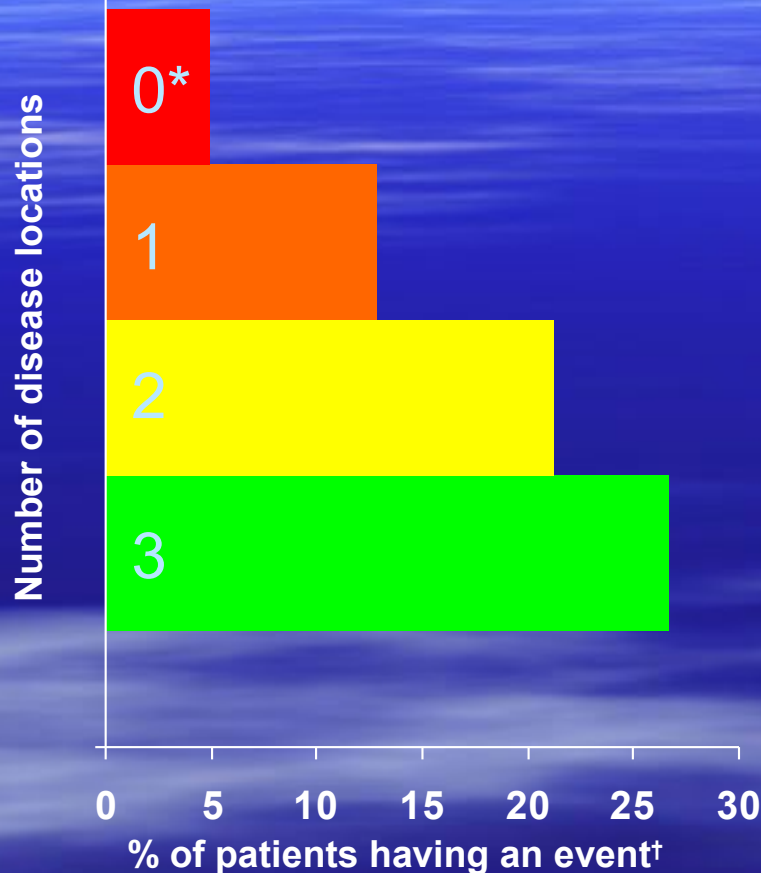
Patients with Type 2 diabetes are a high cardiovascular risk group

7-yr incidence of cardiovascular events (%)



*CV = cardiovascular

Events and inpatient rates in 1 year



1 in 20 risk in first year†

1 in 10 risk in first year†‡

1 in 5 risk in first year†

1 in 4 risk in first year†

PAOD doubles risk

Typical UK General Practice with Disease in Two Vascular Beds

Approximately
1.3 million patients
with MVD in UK^{2*}

87% of 1.3 million =
1.1m patients
approximately

36,016 UK
Full Time
Equivalent
GPs¹

31
patients with
disease in 2
beds per GP

87% of MVD
patients have disease
in 2 beds²

Patients with 2 vascular locations
have a risk of CV death/MI/stroke
or hospitalisation within 12
months³

CAD+CVD = 20%

CAD+PAD = 23%

CVD+PAD = 22%

*

- Derived from Key demographic statistics RCGP Information sheet. Available at http://www.rcgp.org.uk/pdf/ISS_FACT_06_KeyStats.pdf Last accessed 30 January 2008
- Din Link data on file³. Steg GL et al. JAMA 2007;297(11):1197-1206

Mortality

Survival

5 yrs	70%	(90% controls)
-------	-----	----------------

10 yrs	50%
--------	-----

15 yrs	30%
--------	-----

Risk factors for progression of IC

	Odds Ratio
Smoking	3
Diabetes	2
Hypertension	1.4
Age	1.2
Male gender	1.7
Hypercholesterolaemia	no studies

Treatment Options

- Risk Factor Modification
- Exercise
- Angioplasty (PTA)
- PTA plus Stent
- Endarterectomy
- Bypass Surgery

Risk factor Modification

- Smoking cessation
- BP control
- Lipid lowering
- Glycaemic control
- Antiplatelet agent
- Weight reduction
- Exercise programme

Managing Diabetes

Guideline:

HbA_{1c}
Blood pressure
Total cholesterol
LDL cholesterol
Use low-dose aspirin

JBS2¹

< 6.5–7.5%
< 130/80 mmHg
< 4 mmol/l
< 2 mmol/l
✓

SIGN (2001)²

~7%
< 140/80 mmHg
< 5 mmol/l
NONE
✓

QOF targets (41 pts)³:

HbA_{1c} < 7.5%
Blood Pressure < 145/85 mmHg
Total cholesterol < 5 mmol/l
Records of:
- BP
- BMI
- Total cholesterol
- HbA_{1c}
- Neuropathy testing, micro-albuminuria testing

QOF threshold:

40-50%
40-60%
40-70%

40-90%
40-90%
40-90%
40-90%
40-90%

Presentations in patients with diabetes

- Incidental on screening
- Co-existing disease in other beds
- Claudication
- Atrophic changes in feet
- Ulceration
- Foot infections
- Rest Pain

Assessments in patients with diabetes

- History
- Examination
- Look between toes
- Look at heels
- Check for sensation
- Palpate pulses
- ABPI with caution

Special needs in patients with diabetes

- Aggressive risk factor modification
- Good footcare and regular self examination
- Access to podiatry
- Early referral for vascular review
- Beware Infections – rapid deterioration potential

Any questions?

Or maybe clear as mud?